

INTERNATIONAL SEARCH REPORT

Inter- national Application No
PCT/EP2004/007167

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 C12Q1/68

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 7 C12Q

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, BIOSIS, MEDLINE, WPI Data, CHEM ABS Data, EMBASE

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	WO 01/18542 A (LEE JOHN ; LILLIE JAMES (US); THOMPSON PAMELA (US); MILLENNIUM PREDICT) 15 March 2001 (2001-03-15) the whole document	1-14,17, 18
A	WO 01/70979 A (MILLENNIUM PREDICTIVE MEDICINE) 27 September 2001 (2001-09-27) the whole document	1-14,17, 18
A	US 2003/003479 A1 (MORRISSEY MICHAEL P ET AL) 2 January 2003 (2003-01-02) the whole document	1-14,17, 18
A	WO 03/021229 A (BRIGHAM & WOMENS HOSPITAL ; JENSEN RODERICK V (US); BUENO RAPHAEL (US)) 13 March 2003 (2003-03-13) the whole document	1-14,17, 18
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☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

* Special categories of cited documents :

- *A* document defining the general state of the art which is not considered to be of particular relevance
- *E* earlier document but published on or after the international filing date
- *L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- *O* document referring to an oral disclosure, use, exhibition or other means
- *P* document published prior to the international filing date but later than the priority date claimed

- *T* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- *X* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- *Y* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- * & * document member of the same patent family

Date of the actual completion of the international search

28 February 2005

Date of mailing of the international search report

09.05.2005

Name and mailing address of the ISA

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INTERNATIONAL SEARCH REPORT

Inter nal Application No
PC., LP2004/007167

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	SMITH DAVID I: "Transcriptional profiling develops molecular signatures for ovarian tumors" CYTOMETRY, vol. 47, no. 1, 1 January 2002 (2002-01-01), pages 60-62, XP009042914 ISSN: 0196-4763 the whole document	1-14,17, 18
A	----- ONO KENJI ET AL: "Identification by cDNA microarray of genes involved in ovarian carcinogenesis" CANCER RESEARCH, vol. 60, no. 18, 15 September 2000 (2000-09-15), pages 5007-5011, XP002314754 ISSN: 0008-5472 cited in the application the whole document	1-14,17, 18
A	----- HOUGH C D ET AL: "Large-scale serial analysis of gene expression reveals genes differentially expressed in ovarian cancer." CANCER RESEARCH. 15 NOV 2000, vol. 60, no. 22, 15 November 2000 (2000-11-15), pages 6281-6287, XP002215320 ISSN: 0008-5472 the whole document	1-14,17, 18
A	----- HOUGH C D ET AL: "Coordinately up-regulated genes in ovarian cancer." CANCER RESEARCH. 15 MAY 2001, vol. 61, no. 10, 15 May 2001 (2001-05-15), pages 3869-3876, XP002299703 ISSN: 0008-5472 the whole document	1-14,17, 18
A	----- TAPPER J ET AL: "Changes in gene expression during progression of ovarian carcinoma." CANCER GENETICS AND CYTOGENETICS. 1 JUL 2001, vol. 128, no. 1, 1 July 2001 (2001-07-01), pages 1-6, XP002314757 ISSN: 0165-4608 the whole document	1-14,17, 18
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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	SAWIRIS G PETER ET AL: "Development of a highly specialized cDNA array for the study and diagnosis of epithelial ovarian cancer." CANCER RESEARCH. 15 MAY 2002, vol. 62, no. 10, 15 May 2002 (2002-05-15), pages 2923-2928, XP002314758 ISSN: 0008-5472 the whole document.	1-14,17,18
A	MATEI DANIELA ET AL: "Gene expression in epithelial ovarian carcinoma." ONCOGENE. 12 SEP 2002, vol. 21, no. 41, 12 September 2002 (2002-09-12), pages 6289-6298, XP002314759 ISSN: 0950-9232 the whole document	1-14,17,18
A	SHRIDHAR V ET AL: "Genetic analysis of early- versus late-stage ovarian tumors." CANCER RESEARCH. 1 AUG 2001, vol. 61, no. 15, 1 August 2001 (2001-08-01), pages 5895-5904, XP002314760 ISSN: 0008-5472 the whole document	1-14,17,18
A	SCHWARTZ DONALD R ET AL: "Gene expression in ovarian cancer reflects both morphology and biological behavior, distinguishing clear cell from other poor-prognosis ovarian carcinomas." CANCER RESEARCH. 15 AUG 2002, vol. 62, no. 16, 15 August 2002 (2002-08-15), pages 4722-4729, XP002314761 ISSN: 0008-5472 the whole document	1-4,17,18
A	SCHUMMER M ET AL: "Comparative hybridization of an array of 21 500 ovarian cDNAs for the discovery of genes overexpressed in ovarian carcinomas" GENE: AN INTERNATIONAL JOURNAL ON GENES AND GENOMES, ELSEVIER SCIENCE PUBLISHERS, BARKING, GB, vol. 238, no. 2, 1 October 1999 (1999-10-01), pages 375-385, XP002222131 ISSN: 0378-1119 the whole document	1-14,17,18

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	HAVIV IZHAK ET AL: "DNA microarrays for assessing ovarian cancer gene expression" MOLECULAR AND CELLULAR ENDOCRINOLOGY, vol. 191, no. 1, 31 May 2002 (2002-05-31), pages 121-126, XP002314762 ISSN: 0303-7207 the whole document	1-14,17, 18
A	WELSH J B ET AL: "Analysis of gene expression profiles in normal and neoplastic ovarian tissue samples identifies candidate molecular markers of epithelial ovarian cancer" PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF USA, NATIONAL ACADEMY OF SCIENCE. WASHINGTON, US, vol. 98, no. 3, 30 January 2001 (2001-01-30), pages 1176-1181, XP002975970 ISSN: 0027-8424 cited in the application the whole document	1-14,17, 18
A	PEPE MARGARET SULLIVAN ET AL: "Selecting differentially expressed genes from microarray experiments." BIOMETRICS, vol. 59, no. 1, March 2003 (2003-03), pages 133-142, XP008039470 ISSN: 0006-341X the whole document	1-14,17, 18
A	VEER VAN 'T L J ET AL: "Gene expression profiling predicts clinical outcome of breast cancer" NATURE, MACMILLAN JOURNALS LTD. LONDON, GB, vol. 415, no. 6871, 31 January 2002 (2002-01-31), pages 530-536, XP002259781 ISSN: 0028-0836 the whole document	1-14,17, 18
A	VIJVER VAN DE M J ET AL: "THE NEW ENGLAND JOURNAL OF MEDICINE A GENE-EXPRESSION SIGNATURE AS A PREDICTOR OF SURVIVAL IN BREAST CANCER" NEW ENGLAND JOURNAL OF MEDICINE, MASSACHUSETTS MEDICAL SOCIETY, BOSTON, MA, US, vol. 347, no. 25, 19 December 2002 (2002-12-19), pages 1999-2009, XP008032093 ISSN: 1533-4406 the whole document	1-14,17, 18

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	MORIN PATRICE J: "Functional genomics approaches in cancer research" CURRENT GENOMICS, vol. 3, no. 5, October 2002 (2002-10), pages 425-436, XP009042923 ISSN: 1389-2029 the whole document	1-14,17, 18
A	MUGGIA FRANCO ET AL: "Emerging treatments for ovarian cancer." EXPERT OPINION ON EMERGING DRUGS. MAY 2003, vol. 8, no. 1, May 2003 (2003-05), pages 203-216, XP009043003 ISSN: 1472-8214 the whole document	1-4,17, 18
A	VAN DER ZEE A G ET AL: "Molecular analysis of the topoisomerase II alpha gene and its expression in human ovarian cancer." ANNALS OF ONCOLOGY : OFFICIAL JOURNAL OF THE EUROPEAN SOCIETY FOR MEDICAL ONCOLOGY / ESMO. JAN 1994, vol. 5, no. 1, January 1994 (1994-01), pages 75-81, XP009042999 ISSN: 0923-7534 the whole document	1-14,17, 18

INTERNATIONAL SEARCH REPORT

International application No.
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Box II Observations where certain claims were found unsearchable (Continuation of Item 2 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☐ Claims Nos.:
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box III Observations where unity of invention is lacking (Continuation of Item 3 of first sheet)

This International Searching Authority found multiple inventions in this International application, as follows:

see additional sheet

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☒ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:
1-14, 17-18

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-14, 17-18

Method to determine if a patient is afflicted with ovarian cancer involving determining the levels of gene expression of two or more of the (900) genes listed in Table 9 and kits for use therefor. For the reasons detailed below, the search has been limited to the subset of claim 2 (genes No.s 1-28 of Table 9).

2. claims: 15-16 (partially)

Method of treating/inhibiting ovarian cancer via the inhibition of the expression of topoisomerase (DNA) II alpha, the first of the genes shown in Table 6 to be up-regulated in ovarian cancer.

3. claims: 15-16 (partially)

Method of treating/inhibiting ovarian cancer via the inhibition of the expression of chromosome 20 ORF 1, the second of the genes shown in Table 6 to be up-regulated in ovarian cancer.

4. claims: 15-16 (partially)

Method of treating/inhibiting ovarian cancer via the inhibition of the expression of ADP-ribosylation factor-like 7, the third of the genes shown in Table 6 to be up-regulated in ovarian cancer.

5. claims: 15-16 (partially)

Method of treating/inhibiting ovarian cancer via the inhibition of the expression of lamin B1, the 4th of the genes shown in Table 6 to be up-regulated in ovarian cancer.

6. claims: 15-16 (partially)

Method of treating/inhibiting ovarian cancer via the inhibition of the expression of secreted phosphoprotein 1 (osteopontin), the 5th of the genes shown in Table 6 to be up-regulated in ovarian cancer.

7. claims: 15-16 (partially)

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

Method of treating/inhibiting ovarian cancer via the inhibition of the expression of KIAA0101 gene product, the 6th of the genes shown in Table 6 to be up-regulated in ovarian cancer.

8. claims: 15-16 (partially)

Method of treating/inhibiting ovarian cancer via the inhibition of the expression of KIAA0664 gene product, the 7th of the genes shown in Table 6 to be up-regulated in ovarian cancer.

9. claims: 15-16 (partially)

Method of treating/inhibiting ovarian cancer via the inhibition of the expression of claudin 4, the 8th of the genes shown in Table 6 to be up-regulated in ovarian cancer.

10. claims: 15-16 (partially)

Method of treating/inhibiting ovarian cancer via the inhibition of the expression of nuclear RNA helicase, the 9th of the genes shown in Table 6 to be up-regulated in ovarian cancer.

11. claims: 15-16 (partially)

Method of treating/inhibiting ovarian cancer via the inhibition of the expression of kallikrein 8 (neuropsin/ovasin), the 10th of the genes shown in Table 6 to be up-regulated in ovarian cancer.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/EP2004/007167

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
WO 0118542	A	15-03-2001	AU 7701100 A WO 0118542 A2	10-04-2001 15-03-2001
WO 0170979	A	27-09-2001	AU 4592601 A WO 0170979 A2 US 2003165831 A1	03-10-2001 27-09-2001 04-09-2003
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WO 03021229	A	13-03-2003	US 2003219760 A1 WO 03021229 A2	27-11-2003 13-03-2003